

b2 at which the movable element has reached a particular position within the time window.

REMARKS

Claims 1-7 are pending in the present application. Applicants respectfully request that the above-identified application be reconsidered in view of the preceding amendments and the following remarks which are believed to place this application in condition for allowance. No new matter has been added as a result of this amendment.

Objection to the Specification

The specification has been objected. The Examiner has contended the structure associated with the terms "means for determining a duration of a time window" of Claim 7, lines 4-6, and "means for determining a switching instant" of Claim 7, lines 7 and 8, have not been used in the specification. In order to overcome this objection the Applicants have added a new paragraph on page 7, line 10 that provides verbatim support for the subject matter of Claim 7 in the specification. It should also be noted that the structure corresponding to each of these elements is already described in the specification. For example, Figure 1 is the apparatus and Figures 2a, 2b and 3 provide the logic to the "means for determining". Similarly, the means for determining a duration of a time window is also discussed in the specification, such as, at page 4, lines 20 and 29-31, at page 5, line 16 and page 6, line 6. For the reasons discussed above, withdrawal of the objection to the specification is hereby respectfully requested.

Rejection under 35 U.S.C. § 112, first paragraph, with respect to Claims 1-7

Claims 1-7 were rejected under 35 U.S.C. § 112, first paragraph. Applicants respectfully submit that this rejection should be withdrawn for the following reasons.

The Examiner has contended that the "second step of claim 1" ("determining a switching instant") has not been described in the specification in any detail. The Applicants would like to point out that the "switching instant tBIP" has been discussed and described in detail in the specification. For example, on page 4, lines 11-12, 20-23 and 29-31 the Applicants have discussed the "switching instant tBIP". Furthermore, the Examiner contends that the "means for determining a switching instant" of claim 7 is not enabling. The Applicants would like to point out that Claim 16, of U.S. Patent No. 6,097,585 discloses "an arrangement determining a switching instant" and therefore "means" or "arrangement" for determining a switching instant are terms known in the art. Additionally, the Examiner has contended that this "is an apparatus

claim and no apparatus is identified.” The Applicants would like to state that claim 7 of the instant application is analogous to claim 16 of U.S. Patent No. 6,097,585, and that this latter claim is an acceptable apparatus claim. The Applicants have also incorporated by reference the disclosure of U.S. Patent No. 6,097,585 (Heinzelmann et al.) which is related to the instant invention and which is assigned to the assignee of the instant patent application. Furthermore, the Examiner contends that the “means for determining a duration of a time window” is also not enabling. The Applicants would like to point out that “means for determining a duration of a time window” has been discussed and described in detail in the specification. For example, on page 4, lines 20 and 29-31, page 5, line 16, page 6, line 6 the Applicants have discussed the “means for determining a duration of a time window”. Furthermore, times t3 and t4 define a time window (see page 4, line 20), width B of the time window is defined as shown in Figure 3 (see page 5, line 4) and Figure 2b shows the duration of the time window (see page 5, line 10).

For the reasons discussed above, withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is hereby respectfully requested.

Rejection under 35 U.S.C. § 112, second paragraph, with respect to Claims 1-7

Claims 1-7 have been rejected under 35 U.S.C. § 112, second paragraph. Applicants respectfully submit that this rejection should be withdrawn for the following reasons.

In the previous Amended Claims 2 and 4 had been amended. Claim 2 claims that the method according to claim 1, further comprises the step of increasing the duration of the time window if the current is lower than the threshold value. Whereas, Claim 4 claims the method according to Claim 1, further comprising the step of increasing the duration of the time window until a maximum value for the duration is reached. Claim 3 further limits the invention of Claim 1 by stating that the method of Claim 1 further comprises the step of reducing the duration of the time window if the current is greater than the threshold value. Therefore, Claims 2, 3 and 4 clearly limit the scope of Claim 1 by adding additional steps that are not present in Claim 1.

Claim 5 is dependent upon Claim 1, and the steps of Claim 5 are intended to be additional steps occurring after the steps of Claim 1 as observed by the Examiner.

The Applicants would also like to point out that even section § 2173.02 of the MPEP, clearly states that the Examiner "should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire ... [and] should not reject claims or insist on their own

preferences if other modes of expression selected by applicants satisfy the statutory requirement."

(Emphasis added.) And, in the instant case the Applicants have met the statutory requirements.

For the reasons discussed above, withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is hereby respectfully requested.

Rejection under 35 U.S.C. § 103 (a) with respect to Claims 1-7

Claims 1-7 have been rejected under 35 U.S.C. § 103(a). The Patent Office has contended that these claims are unpatentable over Heinzelmann et al. (U.S. Patent No. 6,097,585) ('585). Applicants respectfully submit that this rejection should be withdrawn for the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), not only must the prior art teach or suggest each element of the claim, the prior art must also suggest combining the elements in the manner contemplated by the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F. 2d 931, 934 (Fed. Cir. 1990), cert. denied 111 S.Ct. 296 (1990); In re Bond, 910 F. 2d 831, 834 (Fed. Cir. 1990). The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See M.P.E.P. §2142. To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. See M.P.E.P. §2143. Applicant respectfully submits that neither of these criteria for obviousness are met here.

Applicants' invention in one aspect is a method of activating an electromagnetic consumer having a movable element, the electromagnetic consumer including a solenoid valve for controlling a metering of fuel into an internal combustion engine, comprising the steps of: determining a duration of a time window such that a current flowing through the consumer during the time window does not exceed a threshold value; and determining a switching instant at which the movable element has reached a particular position within the time window.

The Examiner's observation that '585 discloses "the same invention" is not true. The invention of '585 and Applicants' invention are in the same area of technology but they are totally different inventions. For example, '585 first requires the determination of a switching instant when the movable element reaches a predetermined position within a timing window. Whereas, the applicants require the determination of "a duration of a time window such that a current flowing through the consumer during the time window does not exceed a threshold

value". Similarly, '585 requires the controlling of "a voltage to an adaptable setpoint value in at least one of an open loop and a closed loop". Which is different than the Applicants' invention which requires a determination of "a switching instant at which the movable element has reached a particular position within the time window." Furthermore, Figure 2 of '585 and Figure 3 of the Applicants are both flow-charts but they are not similar as contended by the Examiner. For example, Fig. 2 of '585 at step 200 starts with a time meter t, and then at step 230 checks to see if the actual value II is equal to the setpoint value IS. Whereas, the Applicants' Fig. 3 in step 320 looks at if maximum value of the current IB is greater than the threshold value SW, and then depending upon the answer it either goes to the end 350 or goes to another loop via step 360. Therefore, from the teachings of '585 it would not be obvious to one of ordinary skill in the art to modify '585 to result in Applicants' invention even though "the relationship between voltage and current is a well known law of nature." Furthermore, there is no teaching in '585 to suggest the modification of '585 that would result in Applicants' claimed invention. In fact a modification of '585 might result in a voltage detection unit 165 of '585 as a part of the consumer 100 and/or the current detection unit 150 of '585 as a part of the current measuring means 120, which would make the Applicants' invention different than what has been claimed by the Applicants. Additionally, Applicants' claimed subject matter is different than what is claimed by '585 and thus these inventions are dissimilar. Also, having a common terminology in one or more claim does not make the invention "the same" as argued by the Examiner. Furthermore, '585 requires in Claim 1 that "within the timing window, controlling a voltage to an adaptable setpoint value in at least one of an open loop and a closed loop, wherein the voltage is applied to the electromagnetic consumer." Whereas, no such limitation exists in Applicants' Claim 1. In fact the Applicants are "determining a duration of a time window such that a current flowing through the consumer during the time window does not exceed a threshold value", which is very different than what has been claimed and disclosed by '585. Furthermore, the Applicants disagree with the Examiner's statement that "Presumably this is because any such attempt would introduce new matter into the present application", as there is no requirement that an Applicant must amend the claims and/or the specification, and the Examiner should be aware that there are many reasons for not amending the claims and/or the specification.

Claims 2-6 are dependent on Claim 1, and as such are patentable for the same reasons as Claim 1.

For the reasons discussed above, withdrawal of the rejection under 35 U.S.C. § 103 (a), with respect to Claims 1-7, is hereby respectfully requested.

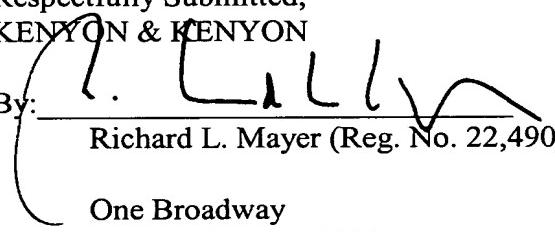
Conclusion

It is therefore respectfully submitted that Claims 1-7 are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

The Examiner is urged to allow this case, however, in the event that this case is not allowed the Applicants request that the Examiner enter this Amendment to put the claims in a better condition for Appeal.

The Examiner is also invited to contact the undersigned attorney if any communication is believed to be helpful in advancing the examination of the present application.

Dated: 4/25/01

Respectfully Submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please amend the specification as follows:

On page 1, line 21 please add the following new paragraph:

--U.S. Patent No. 6,097,585 (Heinzelmann et al.) discloses method and device for driving an electromagnetic consumer, which is assigned to the assignee of the instant patent application, and the disclosure of which is incorporated herein by reference.--

On page 7, line 10 please add the following new paragraph:

--A device for activating an electromagnetic consumer 100 having a movable element is disclosed. The electromagnetic consumer 100 includes a solenoid valve for controlling a metering of fuel into an internal combustion engine, the device comprises, means for determining a duration of a time window such that a current flowing through the consumer 100 during the time window does not exceed a threshold value; and means for determining a switching instant at which the movable element has reached a particular position within the time window.--